

TITLE OF THE INVENTION

APPARATUS FOR ESTABLISHING AN ELECTRICAL CONNECTION WITH A WAFER TO FACILITATE WAFER-LEVEL BURN-IN AND METHODS

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application is a continuation of application Serial No. 09/777,986, filed February 6, 2001, ~~pending~~
NOW U.S. PATENT NO. 6,340,302

BACKGROUND OF THE INVENTION

[0002] Field of the Invention: The present invention relates to methods and apparatus for effecting wafer-level burn-in, or stress testing, of semiconductor devices and, more particularly, to apparatus and methods for establishing an electrical connection between semiconductor devices on a wafer or other substrate including multiple semiconductor devices thereon and burn-in test equipment. Specifically, the present invention relates to apparatus and methods that employ a magnetic field to establish an electrical connection between semiconductor devices carried upon a wafer or other substrate and burn-in test equipment.

[0003] Background of the Related Art: Once semiconductor devices have been fabricated, the semiconductor devices or representative samples thereof are typically subjected to a series of tests. These tests are intended to determine whether the semiconductor devices will meet various performance and reliability standards.

[0004] Stress testing, or burn-in testing, is one of the various types of tests that may be performed on semiconductor devices. Stress testing typically involves the application of a substantial amount of current to one or more semiconductor devices over a prolonged period of time and at an increased temperature or with varied temperature. For example, about 10 milliamps (mA) of current may be applied to each semiconductor device carried upon a substrate as the temperature of the semiconductor device is cycled between ambient temperature and a temperature of at least about 100° C. Such cycling of the temperature of the semiconductor device as current is being applied thereto is intended to stress the semiconductor device by driving any contaminants therein into the active circuitry thereof, thus causing failure of the